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POWER TRIODE

WATER COOLED

GENERAL DATA**Electrical:**

Filament, Tungsten: Two-Section Type

Excitation Single- or Two-Phase AC, or DC

See **FILAMENT CONNECTIONS** and **EXCITATION CIRCUITS** under Type 891. When a single-phase or dc supply is used, do not connect the two filament sections, in parallel. Doing so will overheat common filament lead (large terminal) and damage tube.

Voltage per Section. 11 volts

Current. 60 amp

Starting Current: The filament current should never exceed 120 amperes, even momentarily.

Cold Resistance. 0.031 ohm ←

NOTE: This tube can often be operated with reduced filament voltage as explained on sheet TYPES OF CATHODES in the General Section.

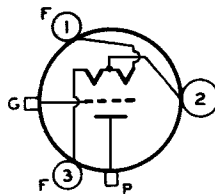
Amplification Factor 50

Direct Interelectrode Capacitances (Approx.):

Grid to Plate. 30 μf ←Grid to Filament 20 μf Plate to Filament. 1.5 μf **Mechanical:**

Terminal Connections:

Term. 1-Filament
Term. 2-Junction of
Filament
Sections,
Base Shell



Term. 3-Filament
G-Grid (Side Arm)
P-Water-Cooled
Plate
Terminal

Mounting Position Vertical, Filament End Up

Maximum Overall Length. 20-7/8" ←

Maximum Radius. 6-1/2"

Water Flow. 3 to 8 gpm

The specified water flow must start before the application of any voltages, and may be removed simultaneously with the removal of all voltages. The pressure in the jacket must not exceed 80 lbs per square inch.

Outlet Water Temperature. 70 max. °C ←

Bulb Temperature. 150 max. °C ←

Components:

Water Jacket (Includes one gasket). RCA MI-7415
Gasket (For spare). RCA MI-7440
Filament Connector (2 required) RCA MI-7422-A
Filament-Section Junction Connector RCA MI-7432
Filament Terminal Block RCA MI-19422-7
Grid Connector. RCA MI-7422-A
Mounting Insulator. RCA MI-7424

← Indicates a change.



POWER TRIODE

AF POWER AMPLIFIER & MODULATOR—Class B

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	15000 max.	volts
MAX.—SIGNAL DC PLATE CURRENT*	2.0 max.	amp
MAX.—SIGNAL PLATE INPUT*	20000 max.	watts
PLATE DISSIPATION*	7500 max.	watts

→ Typical Operation:

Values are for 2 tubes

DC Plate Voltage	6000	10000	12500	volts
DC Grid Voltage†	0	-90	-170	volts
Peak AF Grid-to-Grid Voltage	1000	1380	1370	volts
Zero-Signal DC Plate Current	0.5	0.5	0.4	amp
Max.—Signal DC Plate Current	2.6	3.3	2.8	amp
Effective Load Resistance (Plate to plate).	4200	6400	10000	ohms
Max.—Signal Driving Power (Approx.)#	135	240	160	watts
Max.—Signal Power Output (Approx.)	8000	20000	22000	watts

RF POWER AMPLIFIER—Class B Telephony

Carrier conditions per tube for use with a maximum modulation factor of 1.0

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	15000 max.	volts
DC PLATE CURRENT	1.0 max.	amp
PLATE INPUT.	15000 max.	watts
PLATE DISSIPATION.	10000 max.	watts

→ Typical Operation:

DC Plate Voltage	6000	10000	14000	volts
DC Grid Voltage†	0	-100	-190	volts
Peak RF Grid Voltage	230	370	440	volts
DC Plate Current	0.64	0.77	0.82	amp
DC Grid Current (Approx.) ^o	0.03	0.06	0.03	amp
Driving Power (Approx.) ^{▲o}	77	133	106	watts
Power Output (Approx.)	1000	2500	4000	watts

PLATE-MODULATED RF POWER AMPLIFIER — Class C Telephony

Carrier conditions per tube for use with a maximum modulation factor of 1.0

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	10000 max.	volts
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* Averaged over any audio-frequency cycle of sine-wave form.

† With ac on filament.

The driving stage should have good regulation and should be capable of supplying considerably more than the required driving power.

▲ At the crest of audio-frequency cycle with modulation factor of 1.0.

•^o See next page.

→ Indicates a change.



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DC GRID VOLTAGE.	-3000 max.	volts	
DC PLATE CURRENT	1.0 max.	amp	
DC GRID CURRENT.	0.3 max.	amp	←
PLATE INPUT.	10000 max.	watts	
PLATE DISSIPATION.	6600 max.	watts	

Typical Operation:

DC Plate Voltage	6000	8000	10000	volts	
DC Grid Voltage.	-1000	-1300	-1600	volts	
From a grid resistor of. . .	3570	5420	6960	ohms	
Peak RF Grid Voltage	1650	1950	2250	volts	
DC Plate Current	0.83	0.82	0.78	amp	
DC Grid Current (Approx.) ^o . .	0.28	0.24	0.23	amp	
Driving Power (Approx.) ^o . . .	420	430	460	watts	
Power Output (Approx.)	3500	5000	6000	watts	

RF POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Key-down conditions per tube without amplitude modulation**

Maximum CCS* Ratings, Absolute Values:

DC PLATE VOLTAGE	15000 max.	volts	
DC GRID VOLTAGE.	-3000 max.	volts	
DC PLATE CURRENT	2.0 max.	amp	
DC GRID CURRENT.	0.4 max.	amp	←
PLATE INPUT.	30000 max.	watts	
PLATE DISSIPATION.	10000 max.	watts	

Typical Operation:

DC Plate Voltage	8000	10000	12000	volts	
DC Grid Voltage.	-1000	-1300	-1600	volts	
From a grid resistor of. . .	4540	5420	6960	ohms	
From a cathode resistor of .	720	790	900	ohms	
Peak RF Grid Voltage	1700	2150	2550	volts	
DC Plate Current	1.17	1.4	1.55	amp	
DC Grid Current (Approx.) ^o . .	0.22	0.24	0.23	amp	
Driving Power (Approx.) ^o . . .	330	495	565	watts	
Power Output (Approx.)	6500	10000	14000	watts	

* Continuous Commercial Service.

** Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

^o For effect of load resistance on grid current and driving power, refer to TUBE RATINGS—Grid Current and Driving Power in the General Section.

CHARACTERISTICS RANGE VALUES FOR EQUIPMENT DESIGN

	Note	Min.	Max.	
Filament Current	1	57	62	amp
Amplification Factor	1,2	42.5	57.5	
Grid-Plate Capacitance . . .	-	27	33	μμf
Grid-Filament Capacitance. .	-	15	24	μμf
Plate-Filament Capacitance .	-	0.5	2.5	μμf

← Indicates a change.

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	<u>Note</u>	<u>Min.</u>	<u>Max.</u>	
Plate Voltage.	1,3	7500	11000	volts
Plate Voltage.	1,4	12000	16500	volts
Grid Voltage.	1,5	-240	-400	volts
Grid Voltage.	1,6	-	925	volts
Peak Cathode Current.	7	9	-	amp
Grid Current.	1,6	-	1.75	amp
Useful Power Output.	1,8	20000	-	watts

Note 1: With 22 volts ac on filament connected for single-phase operation.

Note 2: With dc grid voltage of -50 volts and dc plate voltage adjusted to give dc plate current of 0.75 amp.

Note 3: With dc grid voltage of 0 volts, and dc plate voltage adjusted to give dc plate current of 0.75 amp.

Note 4: With dc grid voltage of -100 volts, and dc plate voltage adjusted to give dc plate current of 0.75 amp.

Note 5: With dc plate voltage of 15000 volts, and dc grid voltage adjusted to give dc plate current of 20 ma.

Note 6: With dc plate voltage of 1500 volts, and instantaneous grid voltage adjusted to give instantaneous plate current of 6.0 amp.

Note 7: Represents the maximum usable cathode current (plate current and grid current) for the tube under any condition of operation.

Note 8: With dc plate voltage of 15000 volts, dc plate current of 2.0 amp., dc grid current of 0.25 amp., grid resistor of $5000 \pm 10\%$ ohms, and frequency of 1.5 megacycles/second.

Data on operating frequencies for the 892 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY

Outline Drawing for the 892 is the same as shown for Type 891

Average Filament-Emission Characteristic Curve
and

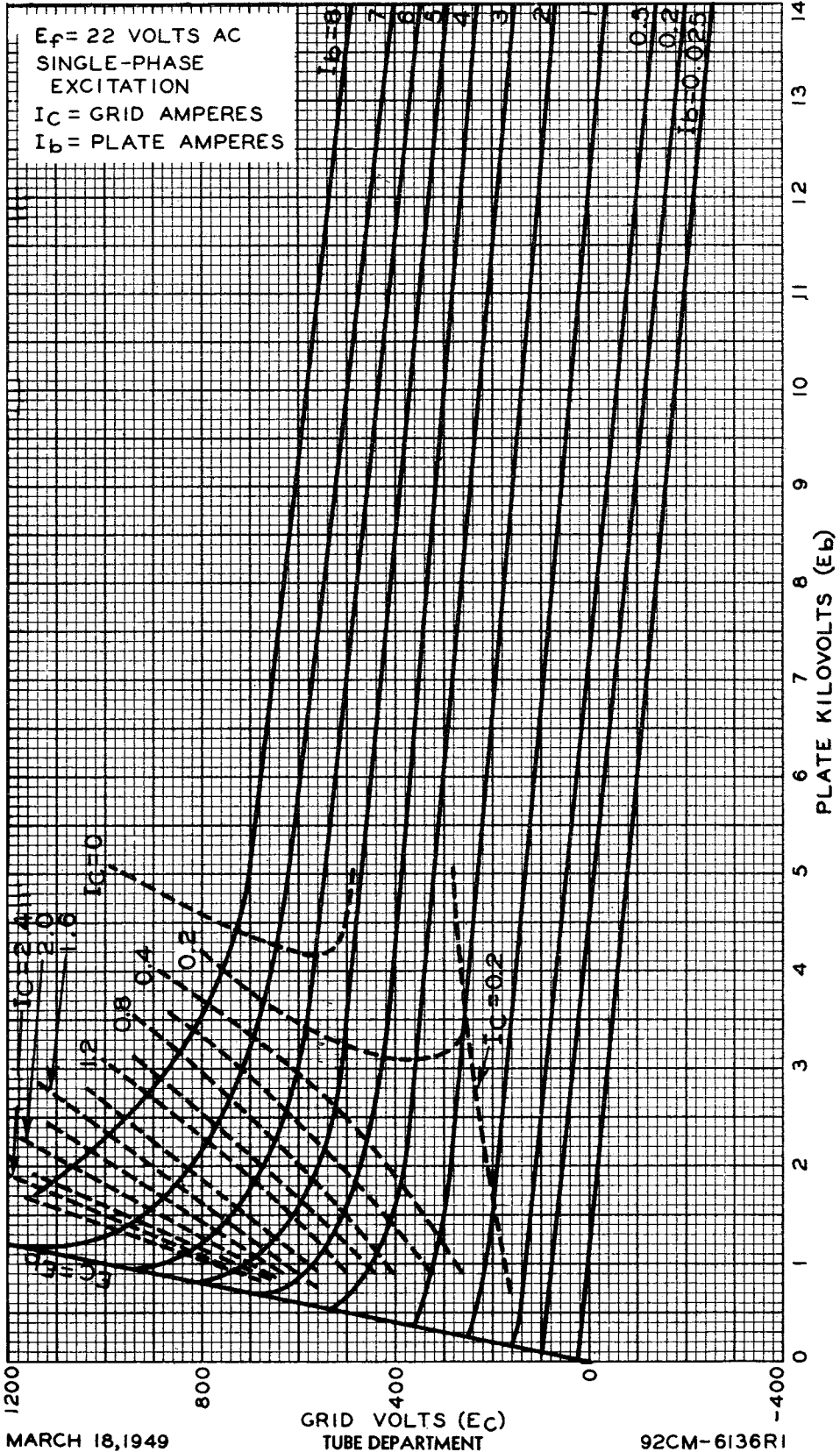
Average Filament Characteristic Curve
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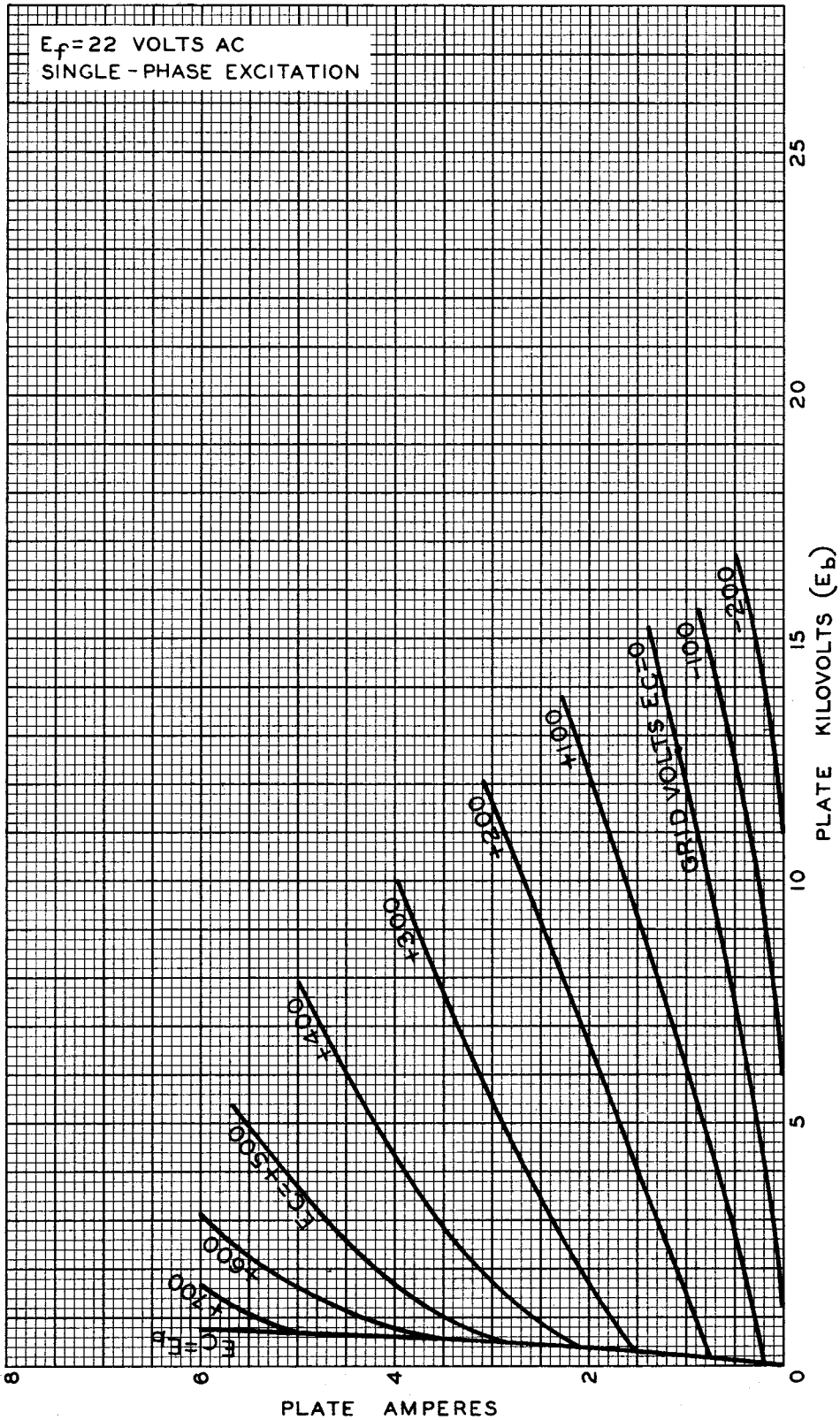
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AVERAGE CONSTANT-CURRENT CHARACTERISTICS





AVERAGE PLATE CHARACTERISTICS





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TYPICAL GRID CHARACTERISTICS

